$cm^3./g.$, and dP/dT is the slope of the $P-T$ curve expressed in megabars per degree; practically it is the pressure in megabars required to raise the melting point one degree. Over the range of temperature covered by our measurements we find

$$\Delta H = 25 \text{ cal. per gram.}$$

This is a value which is higher than the latent heat of melting

TABLE 2

RESULTS FOR FREEZING PRESSURES, AND CHANGE OF VOLUME OF FREEZING

TEMP. °C.	FREEZING PRESSURE MEGABARS	$V_l - V_s$ CM³./G.	dP/dT MEGABARS/DEG.	ΔH CALC.
13.9	1	(0.054)[a]	68	—
21.9	570	0.050	71	25
29.6	1110	...	—	—
31.4	1210	0.047	74	25
38.9	1800	0.042	77	25

[a] By extrapolation.

of most substances. On the other hand the compressibility and change of volume upon freezing do not differ markedly from the average for organic liquids.

BOTANY.—*A peculiar species of Lasiacis.* A. S. HITCHCOCK, Bureau of Plant Industry.

In 1759 Linnaeus described *Panicum divaricatum*[1] from Jamaica, distinguishing the species as divaricately much-branched. This is the first species to be described of a group having perennial branched, woody clambering or trailing stems, broad, flat blades, and panicles of smooth, roundish spikelets, set obliquely on the pedicels, the indurate fruit with a woolly tip. The aspect of the plants is that of a shrubby climbing bamboo. Several allied species have been described and referred to the genus Panicum. In 1864 Grisebach[2] recognized the group as a

[1] Syst. Nat. ed. 10. 2: 871. 1759.
[2] Fl. Brit. W. Ind. 551. 1864.

section of Panicum and gave to it the name Lasiacis, meaning woolly tip. The aspect of the species is so distinct and the technical spikelet characters so pronounced that the present writer elevated this section to the rank of a genus in 1910.[3] Lasiacis includes 13 species ranging from Mexico and the West Indies to Paraguay, one species entering the United States in semitropical Florida.

Lasiacis ruscifolia (H. B. K.) Hitchc. & Chase (*Panicum compactum* Swartz), is more variable and has a wider range than the other species. In an account of the genus as represented in the West Indies[4] occurs the following note:

"In all the Trinidad specimens the spikelets contain a second sterile lemma, a character not found in any other species known to us. This second sterile lemma equals the first, contains a hyaline palea, and infolds the fruit rather more closely than the sterile lemma commonly does in other species. The fruit borne one joint higher on the rachilla consequently faces in the direction opposite to the one in Paniceae, that is, the palea side of the fruit faces the second instead of the first glume."

A reconsideration of the group leads me to the conclusion that we have here a distinct species, for not only is there this unusual character of a second sterile lemma but also a distinct geographical range. Of the group to which it had been referred, all the specimens from Trinidad, the lower Orinoco, and eastern Brazil have a second sterile lemma, while outside of this range, that is, north and west, there is but one sterile lemma in all the specimens examined. In other respects, such as shape of blades and panicle, pubescence, shape and size of spikelets, the new species does not differ from *L. ruscifolia* from which it has been separated. The specimens of the new species, *Lasiacis anomala*, agree closely among themselves in all these characters, but also agree with many specimens referred to the more variable species *L. ruscifolia*.

The peculiarity of the case under consideration consists in the nature of the single diagnostic technical character, the second

[3] Contr. U. S. Nat. Herb. **15**: 16. 1910.

[4] Hitchcock and Chase. *Grasses of the West Indies*. Contr. U. S. Nat. Herb. **18**: 339. 1917.

sterile lemma. To those unfamiliar with the morphology of the grass spikelet it may be explained that the spikelets of the tribe Paniceae are characterized by two membranaceous bracts (glumes) at the base or outside, a third bract (sterile lemma) like the glumes in texture, and often enclosing a staminate flower but producing no seed, and finally a fertile lemma, which is indurate or at least thicker than the glumes, and which incloses a seed. The presence of a second sterile lemma is contrary to our concept of the whole tribe and if found here and there among our specimens would be looked upon as a teratological development. *A priori* one would be inclined to assign generic rank to a species or group of species possessing this character. In the case before us, however, the specimens possessing this character are indistinguishable in other respects from *L. rusci-folia*. Even specific rank is granted only because of the distinct range and the uniformity of the specimens. A technical diagnosis follows:

Lasiacis anomala Hitchc. n. sp.

Stems woody, branching, clambering over bushes, glabrous, the main culm as much as 5.5 mm. thick, and 5 meters long; sheaths glabrous or more or less pilose, striate, ciliate on the margin, densely villous on the collar; ligule a short ciliate membrane; blades ovate-lanceolate or elliptic lanceolate, as much as 10 cm. long and 3 cm. wide on the main flowering culms, usually 4–6 cm. long and 1–2 cm. wide on the lateral flowering branches, rather thin, narrowed and usually asymmetric at base, sometimes a little cordate-clasping, puberulent, or sometimes glabrate on the upper surface; panicles oblong-ovoid, 7–10 cm. long, 3–5 cm. wide, those on the lateral branches smaller, the lower branches somewhat distant, spreading or somewhat reflexed, all rather compactly flowered, puberulent, the pedicels angled, rather stout, 1–2 mm. long; spikelets ovoid, becoming nearly globose at maturity, 3–4 mm. long; first glume about one-third, second glume about two-thirds, as long as the spikelet; first and second sterile lemma about equal and about as long as the fertile lemma, the glumes and lemmas slightly woolly at the tip, the second sterile lemma infolding the fruit more closely than usual for the first lemma in other species; fruit ovoid-globose, obtuse, because of the presence of a second sterile lemma the palea side facing the second glume.

Type in the U. S. National Herbarium, no. 865557, collected along the edge of jungle, Fort George Road, Port of Spain, Trinidad, November 27, 1912, by A. S. Hitchcock (Amer. Gr. Nat. Herb. no. 595).

DISTRIBUTION: Trinidad to eastern Brazil.
SPECIMENS EXAMINED.
TRINIDAD: *Broadway* 2504, 2564, 2627; *Bot. Gard. Herb.* 2303; *Hitchcock* 10001, 10063, 10117, 10136.
VENEZUELA: Santa Catalina, *Rusby & Squires* 358; Island of Margarita, *Miller & Johnston* 184.
BRAZIL: Rio Branco, *Kuhlmann* 3358; Ceara, *Gardner*, 1889, 1894.

TECHNOLOGY.—*The determinateness of the hysteresis of indicating instruments.* F. J. SCHLINK, Bureau of Standards.

STATEMENT OF THE PROBLEM

The purpose of the present paper is to set down briefly the results of one of several concordant preliminary experiments carried out to determine to what extent hysteresis or variance determinations with respect to nonintegrating mechanical measuring instruments are themselves sufficiently definite and reproducible to warrant wide application in instrument testing, calibration, and utilization. The conclusion is reached that no extraordinary experimental care is required to arrive at hysteresis determinations of very definite utility, and that, under stated conditions, such determinations are of a highly reproducible character. These results are forecast in a paper just completed by the author, to which the reader may refer for a general discussion of hysteretic cycles in the operation of measuring instruments and of the fundamental relation which such cycles bear to testing and calibration.[1]

APPARATUS AND METHOD

In order to minimize the experimental difficulties and to permit of useful generalization of the results of the investigation, the instrument chosen as the basis for this work was a spring-controlled self-indicating weighing scale of the stabilized-platform pointer-and-dial type, a sort commonly used for the weighing of postal and express parcels, and to a very limited extent of vegetables and other low-priced commodities of trade. The choice of this particular type of instrument, shown dia-

[1] *The concept of resilience with respect to indicating instruments.* To be published in the Journ. Franklin Inst., February, 1919.